MATERIAL SAFETY DATA SHEET
POLY PHOSPHORIC ACID

1. Chemical Product and Company Identification

Product Name : Poly Phosphoric Acid (PPA)
Manufacturer : **S M Chemicals**
Address : S M Chemicals
311/312, Nand Prem, 142, Nehru Road, Vile Parle (E)
Mumbai- 400057
INDIA
Tel no. 91-22-26104202/26151500/26136732
Fax no. 91-22-26104201
Regd. Office
Plot No. 313/1, G I D C, Vapi -396195,
District Valsad, Gujarat
Tel No. 91-260-2781049/2780149/2781013
www.sandhya-group.com
socpl@vsnl.com

Emergency Contact No. : 91-22-26104202/26151500/26136732

2. Composition, Information on Ingredients

	CAS#	HS Code.	UN No.
Poly-Phosphoric Acid (P_2O_5content 83-85%)	7664-38-2	2809 2002	UN 1805

3. Hazards Identification

POTENTIAL HEALTH EFFECTS:
EYE: Corrosive, Causes Redness, pain and poor visibility
SKIN: Corrosive, Causes Redness, pain and burns
INHALATION: Corrosive, Causes sore throat, shortness of breath and dyspnoea
SIGNS AND SYMPTOMS: Eye, skin or respiratory tract irritation. Gastrointestinal disturbance, diarrhea
Physical & Chemical Hazards: Forms flammable & Explosive hydrogen through corrosion of metals. At high temperature: Thermal decomposition giving corrosive products.

4. First Aid Measures

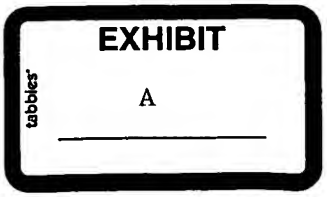
EYE: Wash immediately & abundantly with water for at least 15 minutes. Consult an ophthalmologist immediately.
SKIN: On contact with eyes, rinse immediately with plenty of water and seek medical advice.
INGESTION: Do not induce vomiting, rinse mouth and lips with plenty of water if The subject is conscious, then hospitalize immediately.
INHALATION: Move to fresh air. If required, provide oxygen or artificial respiration. Hospitalize.
NOTE TO PHYSICIANS: Treat symptomatically. (See Section 3 For Observable Signs/Symptoms).

5. Fire Fighting Measures

Suitable extinguishing media : Incase of Fire nearby: Dry Powder, Foam, Carbon dioxide(CO_2)
Specific Methods : In case of Fire: remove exposed containers. Cool containers with water spray.
Special Protective Equipment for Firefighters: Incase of Fire: wear a self-contained breathing apparatus and acid resistant clothing.

6. Accidental Release Measures

Personal precaution : Avoid contact with skin and eyes and inhalation of hot vapors.
Environmental protection : Do not allow material to be released to the environment. Do not let the product enter into drains. Contain by damming.
Methods for cleaning up : -



Recovery : Pump into an inert labeled emergency container. Clean up puddle of Product immediately. Dilute the puddles with water & recover it.
Neutralization : Dilute cautiously with water & then process. Neutralize with an alkaline carbonate or neutralize with slaked lime (Filter the salt obtained –neutralize the liquid)

7. Handling and Storage

Handling
Technical measures/ Precautions : Storage & handling precautions applicable to products. Ensure appropriate exhaust & ventilation at Machinery. Provide showers, eye baths.
Safe handling advice : Avoid splashing when handling. Do not pour water onto the acid (Exothermic reaction)

Storage
Technical measures : Keep containers tightly closed in a cool, well-ventilated place.
Storage Information : Store in well-insulated area. Store protected from moisture & heat. Keep at temperature above 16 ^{0} C Provide a catch-tank & an impermeable corrosion resistant floor with drainage to a neutralization tank within a bunked area. Provide anti-corrosion electrical equipment.
Incompatible Products : Bases-Quicklime Alcohols-Ketones-Amines Water Nitrates-Chlorates-Calcium Carbide Metals-Finely divided metals Combustible Material.
Recommended : Stainless steel 316 L-Carbon Steel (Vulcanized Rubber coated Steel) PlasticMaterials (Polyurethane) SmallQuantities: Glass protected by a fitted metallic Covering.
To be avoided : Metals: Ordinary Steel, Copper, Aluminum, (and alloys)

8. Exposure Controls, Personal Protection

Protective Provisions : Ensure sufficient air exchange and/ or exhaust in working areas.
Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection : Gloves.
Eye protection : Safety glasses / goggles. Face mask (in case of spattering).
Skin & body protection : Protective clothing Non-skid boots (Butyl rubber-chlorinated polyethylene-Neoprene-Polyvinyl Chloride).
Specific hygienic Measures : Avoid contact with skin and eyes and inhalation of hot.

9. Physical and Chemical Properties

Physical State	:	Viscous liquid
Color	:	Colorless
Odour	:	none
Solubility in Water	:	Completely soluble, formation of Orthophosphoric acid.
Solubility in solvents	:	Soluble in Alcohols
Specific gravity	:	1.85-2.05 depending upon the concentration.

10. Stability and Reactivity

Conditions to avoid : Store protected from moisture & heat
Materials to avoid : Bases, Quicklime: Exothermic reaction-Violent reaction Alcohols- ketones -Amines: Exothermic reaction Water: Very exothermic reaction & possibility of spitting Nitrates-Chlorates – Calcium Carbide: Explosive reaction (Flammability) Metals – finely divided metals Combustible materials: Overheating and ignition. Hazardous Decomposition products: Forms flammable & explosive hydrogen through corrosion of metals at Temperatures above 200 ° C. Formation of: Polyphosphoric Acid (Dehydration) At high temperature: Thermal decomposition giving corrosive products: Oxydes of Phosphorus
Further Information : Hygroscopic product

MATERIAL SAFETY DATA SHEET
POLY PHOSPHORIC ACID

11. Toxicological Information

Acute toxicity : May be harmful by inhalation, ingestion, or skin absorption. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes and skin.
Inhalation : Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting
Chronic Effects : Target Organ(S): Liver, Blood, Bone Marrow
Additional toxicological Information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH

12. Ecological Information

Persistence/ degradability in water : Hydrolysis, formation of : H_3PO_4(depends on the tempereature) $t_{1/2}$ life = few days.

Aquatic Toxicity : -
Ecotoxicity : -

13. Disposal Considerations

Disposal of the Product : Recommendation: Consult state, local or national regulations for proper disposal. Dilute cautiously with water and then process. Neutralize with an alkaline carbonate or Neutralize with slaked lime (Filter the salt obtained- Neutralize the liquid).
Recommendation : Disposal must be made according to official regulations.

14. Transport Information

UN number	:	UN 1805
Transport name	:	Poly phosphoric acid
ADR/RID/IMO Class	:	8
Packing group	:	III
Label	:	8

15. Regulatory Information

Symbol

16. Other Information

This information is based on our present state of knowledge. It should not therefore be constructed as guaranteeing specific properties of this product or their suitability for a particular application.

SAFETY DATA SHEET

ORTHOPHOSPHORIC ACID 80 - 90 %

Issued: 01/12/2005

Revision No: 4

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product name: ORTHOPHOSPHORIC ACID 80 - 90 %

CAS number: 7664-38-2

EINECS number: 231-633-2

Index number: 015-011-00-6

Product code: REM079

Synonyms: PHOSPHORIC ACID...100%

PHOSPHORIC ACID 80% - 85%

Company name: OM Group Ultra Pure Chemicals Ltd

Amber Business Centre

Riddings

Alfreton

Derbyshire

DE55 4DA

United Kingdom

Tel: +44 (0) 1773 844200

Fax: +44 (0) 1773 844244

Emergency tel: +44 (0) 1773 844333

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous ingredients: ORTHOPHOSPHORIC ACID 80 - 90 % 70-90%

3. HAZARDS IDENTIFICATION

Main hazards: Causes burns.

4. FIRST AID MEASURES (SYMPTOMS)

Skin contact: Blistering may occur. Progressive ulceration will occur if treatment is not immediate.

Eye contact: Corneal burns may occur. May cause permanent damage.

Ingestion: Corrosive burns may appear around the lips. Blood may be vomited. There may be bleeding from the mouth or nose.

Inhalation: There may be shortness of breath with a burning sensation in the throat. Exposure may cause coughing or wheezing.

4. FIRST AID MEASURES (ACTION)

Skin contact: Remove all contaminated clothes and footwear immediately unless stuck to skin. Drench the affected skin with running water for 10 minutes or longer if substance is still on skin. Transfer to hospital if there are burns or symptoms of poisoning.

Eye contact: Bathe the eye with running water for 15 minutes. Transfer to hospital for specialist examination.

Ingestion: Wash out mouth with water. Do not induce vomiting. Give 1 cup of water to drink every 10

minutes. If unconscious, check for breathing and apply artificial respiration if necessary. If unconscious and breathing is OK, place in the recovery position. Transfer to hospital as soon as possible.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. If unconscious and breathing is OK, place in the recovery position. If conscious, ensure the casualty sits or lies down. If breathing becomes bubbly, have the casualty sit and provide oxygen if available. Transfer to hospital as soon as possible.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

Exposure hazards: Corrosive. In combustion emits toxic fumes.

Protection of fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Notify the police and fire brigade immediately. If outside keep bystanders upwind and away from danger point. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Turn leaking containers leak-side up to prevent the escape of liquid.

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding.

Clean-up procedures: Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

7. HANDLING AND STORAGE

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area. Do not handle in a confined space. Avoid the formation or spread of mists in the air.

Storage conditions: Store in cool, well ventilated area. Keep container tightly closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Workplace exposure limits

WEL (8 hr exposure limit): 1 mg/m3

WEL (15 min exposure limit): 2 mg/m3

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Self-contained breathing apparatus must be available in case of emergency.

Hand protection: Impermeable gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Impermeable protective clothing.

[cont...]

9. PHYSICAL AND CHEMICAL PROPERTIES

State: Liquid

Colour: Colourless

Odour: Odourless

Solubility in water: Miscible in all proportions

Viscosity: Viscous

Viscosity value: 11cP

Boiling point/range°C: 171

Melting point/range°C: 28 at 90-%

Vapour pressure: 0.03

Relative density: 1.74

pH: 2

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions.

Conditions to avoid: Heat.

Materials to avoid: Strong oxidising agents. Strong acids.

Haz. decomp. products: In combustion emits toxic fumes.

11. TOXICOLOGICAL INFORMATION

Routes of exposure: Refer to section 4 of SDS for routes of exposure and corresponding symptoms.

12. ECOLOGICAL INFORMATION

Mobility: Readily absorbed into soil.

Persistence and degradability: Biodegradable.

Bioaccumulative potential: No bioaccumulation potential.

Other adverse effects: Negligible ecotoxicity.

13. DISPOSAL CONSIDERATIONS

Disposal of packaging: Arrange for collection by specialised disposal company.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

14. TRANSPORT INFORMATION

ADR / RID

UN no: 1805

ADR Class: 8

Packing group: III

Classification code: C1

Shipping name: PHOSPHORIC ACID, LIQUID (ORTHOPHOSPHORIC ACID...80 - 90%)

Labelling: 8

Hazard ID no: 80

[cont...]

IMDG / IMO

UN no:	1805	**Class:**	8
Packing group:	III	**EmS:**	F-A,S-B
Marine pollutant:	NO	**Labelling:**	8

IATA / ICAO

UN no:	1805	**Class:**	8
Packing group:	III	**Packing instructions:**	819(P&CA); 821(CAO)
Labelling:	8		

15. REGULATORY INFORMATION

Hazard symbols: Corrosive.

Risk phrases: R34: Causes burns.

Safety phrases: S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Note: The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.